

### **Remarks**

Claims 1-19 are pending. New claim 20 is added. Claims 1, 8, 12, 18, and 19 are amended and claim 20 is added. No new matter is introduced by these amendments and presentation of new claim 20. Upon entry of the present amendments, claims 1-20 are pending.

### **Specification**

The Examiner has stated that the specification improperly incorporates by reference the subject matter of other U.S. patent applications. It is respectfully submitted however, that the incorporations by reference in the present application are proper per MPEP 608.01(p)(I)(A). Applicants have reviewed all such incorporations by reference made in the application. All of the incorporations are made with respect to issued U.S. patents, published foreign patent documents, non-patent publications, or prior filed, commonly owned, U.S. Provisional Patent Applications. Applicants further note that none of the information incorporated by reference is relied upon herein to overcome any other objection, rejection, or other requirement imposed by the United States Patent and Trademark Office. Consistent with MPEP 608.01(p)(I)(A) Applicants believe no amendment is required.

### **Claim Rejections - 35 USC § 112**

Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which application regards as the invention. The Examiner stated that the S and D portions of the amphipathic copolymer need to be defined by their functions. The claims have been amended to clarify the S and D terminology. It is respectfully submitted that the amended claims now satisfy the requirements of Section 112.

### **Claim Rejections - 35 USC § 103**

Claims 1-11, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosel (3,753,760) in view of deGraft-Johnson (5,232,811). It was stated, in effect,

that deGraft-Johnson teaches amphipathic copolymers with crosslinkable functionality and that it would be obvious to use the deGraft-Johnson material as the binder resin or stabilizer in the liquid toner of Kosel.

This rejection is traversed because deGraft-Johnson fails to teach cross-linkable amphipathic materials as suggested by the Examiner.

All of the claims recite subject matter relating to a liquid toner incorporating at least one amphipathic copolymer having crosslinkable functionalities. Neither the primary reference Kosel or the secondary reference deGraft-Johnson provide even a remote suggestion to use a crosslinkable

It is true that some of the monomers used in the deGraft-Johnson material have pendant acid and epoxy functionalities. However, **these are used to form internal links between copolymer pieces of the resultant amphipathic copolymer as it is made and are not pendant from the final amphipathic copolymer itself.** DeGraft-Johnson prepares dyed latex particles from a dispersing agent, a fixative agent, and a coloring agent. DeGraft-Johnson prepares the dispersing agent essentially in two steps. The fixative agent is then prepared in situ and attached/grafted to the dispersing agent. Neither the fixative agent nor the dispersing agent by itself is amphipathic. However, the resultant copolymer formed by coupling the fixative agent to the dispersing agent is amphipathic. Once formed, the resultant amphipathic copolymers as described by deGraft-Johnson have no crosslinkable functionality.

More specifically, according to the first step that deGraft-Johnson uses to prepare the dispersing agent, deGraft-Johnson copolymerizes vinyl monomers to form an epoxy functional copolymer via vinyl addition polymerization. The preferred vinyl monomers for this are lauryl methacrylate and glycidyl methacrylate. Because of the presence of the glycidyl monomer, the resultant vinyl copolymer (which deGraft-Johnson calls the dispersing agent) is epoxy functional. See deGraft-Johnson at col. 3, lines 45 to 61. However, **this epoxy functional copolymer is not amphipathic and is not incorporated into the liquid toner per se.** Rather, it is the first building block of the resultant amphipathic material yet to be formed.

In the second step, deGraft-Johnson attaches a pendant vinyl group to the epoxy functional material. He does this by reacting the epoxy functional material with a vinyl

monomer such as methacrylic acid. The acid group of the methacrylic acid is not pendant from the resultant product, but rather is used to form an ester linkage with the epoxy functionality. See deGraft-Johnson from col. 3, lines 61 to col. 4, line 2. DeGraft-Johnson refers to this intermediate product as the dispersing agent.

It is true that this intermediate dispersing agent has pendant vinyl functionality. However, **it is not yet amphipathic and is not incorporated into the liquid toner per se**. Rather, it is a second building block of the resultant amphipathic material yet to be formed.

In a third step, deGraft-Johnson finally forms the amphipathic copolymer, in effect, by grafting additional copolymer segments onto the dispersing agent via the pendant vinyl functionality of the dispersing agent. DeGraft-Johnson refers to the additional copolymer segments as the “fixative agent”. Note in col. 4, lines 12-32, where the fixative agent is formed and simultaneously grafted to the dispersing agent by reacting the vinyl functional dispersing agent with vinyl monomers such as n-butyl acid maleate and vinyl acetate, **both esters**.

Quite clearly, when following the deGraft-Johnson procedure with the ingredients used by deGraft-Johnson, the resultant amphipathic copolymer of deGraft-Johnson does not have crosslinkable functionality and therefore fails to cure the deficiencies of the primary reference Kosel.

Inasmuch as neither Kosel nor deGraft-Johnson teach a liquid toner incorporating an amphipathic copolymer with crosslinkable functionality, it is respectfully submitted that the claims are patentable over the proposed combination of Kosel and deGraft-Johnson. Withdrawal of the rejection is respectfully requested.

### **Double Patenting**

Claims 1-19 stand provisionally rejected under the judicially created doctrine of double patenting as being unpatentable over claims 1-6 of co-pending application 10/612058. The cited, co-pending application is commonly owned with the present application. Enclosed please find a terminal disclaimer to overcome the rejection.

Conclusions

Approval of the application and allowance of the claims is earnestly solicited. In the event that a phone conference between the Examiner and the Applicant's undersigned attorney would help resolve any remaining issues in the application, the Examiner is invited to contact said attorney at (651) 275-9804.

Respectfully Submitted,

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Dated: Sept. 23, 2005

PJP#12629